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DATE: July 18, 2013

SUBJECT: Organic Data Validation (S4VEM)
Case: 43561
SDG: C0429
Site: North Penn – Area 5

FROM: Ex. 4 - CBI
Organic Data Reviewer

Ex. 4 - CBI
Oversight Chemist

TO: Colleen Walling
ESAT Region 3 Project Officer

OVERVIEW

Case 43561, Sample Delivery Group (SDG) C0429, consisted of thirteen (13) aqueous samples including one (1) field duplicate pair, two (2) trip blank and one (1) Performance Evaluation (PE) as well as six (6) soil samples including one (1) field duplicate pair and one (1) PE analyzed for volatile compounds. All analyses were performed by Shealy Environmental Services, Inc. (SHEALY) in accordance with Contract Laboratory Program (CLP) Statement of Work (SOW) SOM01.2 through the Routine Analytical Services (RAS) program.

SUMMARY

Data were validated according to National Functional Guidelines for Validation of Organic Data, utilizing the Environmental Data Exchange and Evaluation System (EXES) tool and is assigned the Superfund Data Validation Label S4VEM (Stage_4_Validation_Electronic_Manual). Areas of concern with respect to data usability are listed below.

It should be noted that in SOM01.2, 1,4-dioxane is no longer a target analyte by Trace VOA and Trace VOA SIM analyses. Using SOM01.2 for the detection and reporting of 1,4-dioxane at low and medium levels has not consistently generated data of sufficiently known quality. This is due to poor purge efficiency. Results for 1,4-dioxane using this method should be considered advisory.

Data pertaining to the PE samples were not available at the time of this review; therefore, evaluation of these data was not performed.

MAJOR PROBLEM

Relative Response Factors (RRFs) for 1,4-dioxane were outside criteria in initial and continuing calibration standards associated with the samples in this sample set. The positive result reported for this compound in sample C1KP8 was impacted and qualified "J"; quantitation limits for this compound are unusable and qualified "R".

MINOR PROBLEMS

Recoveries for the following Deuterated Monitoring Compounds (DMCs) were outside upper control limits for the samples listed below. Positive results for compounds associated with these DMCs in these samples were impacted and qualified "J".

DMC	affected samples
toluene-d_8	C0503, C0503DL, C0507DL
1,1-dichloroethene-d_2	C0503, C0507

Recoveries for the following DMCs were outside lower control limits for the samples listed below. Positive results and quantitation limits for compounds associated with these DMCs in these samples were qualified "J" and "UJ", respectively.

DMC	affected sample
toluene-d_8	C0441
1,2-dichloroethane-d_4	C0437

NOTES

Tentatively Identified Compounds (TICs) were not validated. They are validated only at a specific request of the data users. TIC data are included in the sample results.

Compounds detected below Contract Required Quantitation Limits (CRQLs) are qualified "J" unless reported at CRQL and qualified "U" due to blank contamination.

Detected concentrations of common laboratory contaminants methylene chloride, acetone and 2-butanone less than two times (<2X) CRQLs have been reported at CRQLs and qualified "U" in samples for which the associated method, storage and/or trip blanks had the same compound present.

The laboratory reported four (4) DMC outliers in the initial analysis for sample C0440. This sample was re-analyzed with no DMC outliers. The re-analysis of this sample was reported by the reviewer.

The laboratory reported a recovery for one (1) DMC outside the lower control limit in continuing calibration standard VSTD050BF. Associated samples C0500, C0502, C0505, C0509 and C0510 were re-analyzed, though this outlier did not impact sample data. The initial analyses of these samples were reported by the reviewer.

Sample C0429 reported several DMC outliers outside upper control limits in the initial analysis. This sample was re-analyzed outside the technical holding time of fourteen (14) days from sample collection to sample analysis with similar results. The initial analysis of this sample was reported by the reviewer. No positive results were reported for compounds associated with these DMCs in this sample; therefore, no data were impacted due to these outliers.

Several sample analyses reported recoveries for DMCs outside upper control limits. Positive results for compounds associated with these DMCs were not reported from these analyses; therefore, data were not impacted due to these outliers unless previously noted in "Minor Problems".

Several sample re-analyses reported recoveries for DMCs outside lower control limits. These analyses were not reported; therefore, data were not impacted due to these outliers.

Based on sample screening, the following samples were initially analyzed at the dilutions listed below. The CRQLs for these samples are elevated due to the dilutions.

dilution	sample(s)
2X	C0501, C0503, C0507, C0508
10X	C0504

Concentrations of trichloroethene exceeded the calibration range in the initial analysis for the samples listed below. These samples were re-analyzed at dilution to bring the concentration of the compound within the calibration range. Results for both analyses may be found on SSR forms. Results for trichloroethene should be used from the dilutions noted.

dilution	sample(s)
10X	C0501, C0503, C0507, C0508
100X	C0504

A sample cooler containing several samples had an interior temperature of 7.1^{o}C, which exceeded the required cooler temperature of 4.0^{o}C$\pm$2.0^{o}C. No data were qualified due to this discrepancy, as this criterion was not grossly exceeded.

Reported results for aqueous field duplicate pair C0501/C0508 and soil field duplicate pair C0437/C0439 were comparable with the exception of trichloroethene in C0437/C0439.

GLOSSARY OF DATA QUALIFIER CODES (ORGANIC)

U	The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the adjusted Contract Required Quantitation Limit (CRQL) for sample and method.
J	The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain quality control criteria were not met, or the concentration of the analyte was below the CRQL).
B	The assessment of blank analysis results has determined the existence and magnitude of contamination resulting from laboratory (or field) activities.
NJ	The analysis indicates the presence of an analyte that has been "tentatively indentified" and the associated numerical value represents its approximate concentration.
UJ	The analyte was not detected at a level greater than or equal to the adjusted CRQL. However, the reported adjusted CRQL is approximate and may be inaccurate or imprecise.
R	The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.
C	This qualifier applies to pesticide and Aroclor results when the identification has been confirmed by Gas Chromatograph/Mass Spectrometer (GC/MS).
X	This qualifier applies to pesticide and Aroclor results when GC/MS analysis was attempted but was unsuccessful.

DCN: 43561_C0429